Missouri Department of Natural Resources

Total Maximum Daily Load Information Sheet

Long Branch Reservoir

Waterbody Segment at a Glance:


State map showing location of watershed

County: Macon
Nearby Cities: Macon
Area of impairment:
Pollutant: Cyanazine
Source:

Note: The long term average level of Cyanazine now meets state water quality standards. Therefore, Cyanazine was deleted as a pollutant of this lake on the 2002 303(d) List. The lake remains on the 2002 303(d) List due to levels of Mercury in Largemouth Bass. A separate information sheet discusses Mercury contamination in Missouri waters.

TMDL Priority Ranking: N/A

Beneficial uses of Long Branch Lake:
- Livestock and Wildlife Watering
- Protection of Warm Water Aquatic Life
- Protection of Human Health associated with Fish Consumption
- Boating and Canoeing
- Drinking Water Supply
- Whole Body Contact

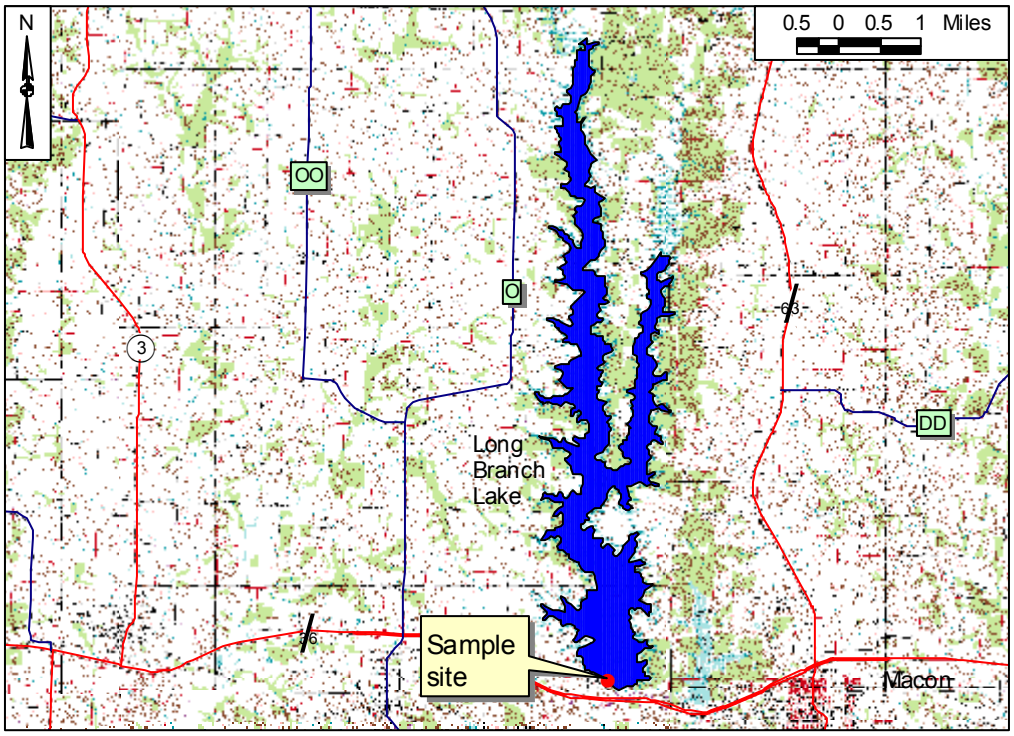
Use that is impaired
- N/A

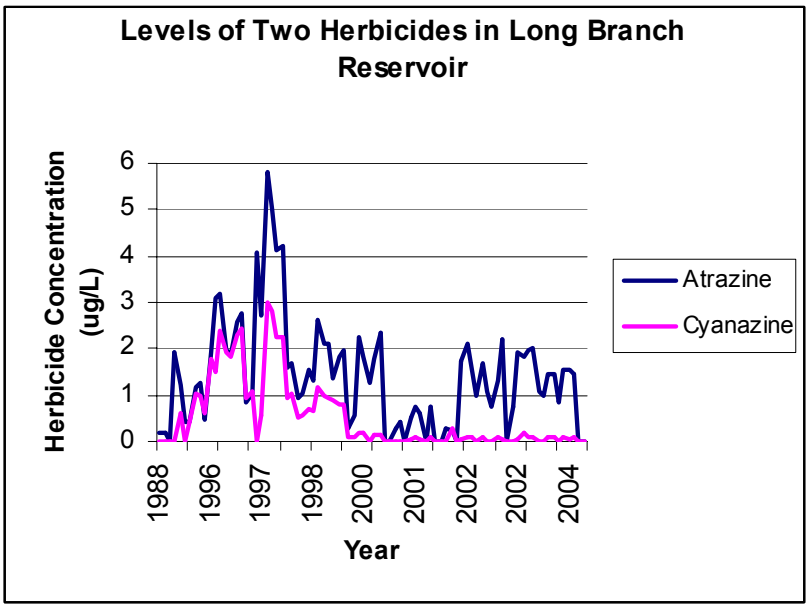
Standards that apply
- A federal health advisory level of one microgram per liter (µg/L) cyanazine is recommended for drinking water supplies.

Background Information and Water Quality Data
Long Branch Lake was formed in 1980 by impounding a section of the East Fork of the Little Chariton River. Its watershed comprises 66,400 acres. The watershed is primarily agricultural with 29 percent cropland, 39 percent grassland, 27 percent forest, four- percent water, and one percent

urban. Major crops include corn, soybeans and wheat, with no-till operations predominating. The lake surface totals 2,430 acres. Long Branch Lake is a drinking water source for the city of Macon. Cyanazine is an agricultural herbicide that was used from 1971 to 1999, when its manufacturer voluntarily withdrew it from production. At one time it was the fourth most widely used synthetic chemical pesticide in U.S. agriculture, applied to corn, cotton and sorghum crops to control broadleaf weeds. It is relatively persistent in the environment, and under certain conditions will remain at significant levels in surface water for over one year. It has been identified as a surface water contaminant in 30 states, including Missouri. Cyanazine was withdrawn from use after being linked to a range of adverse health effects, including respiratory distress, cerebral palsy and impaired fetal development. During the 1990s, concentrations of cyanazine in Long Branch Reservoir frequently exceeded the level of concern, which is one µg/L. Since cyanazine production was discontinued in 1999, the long-term average has decreased to 0.52 µg/L. Cyanazine was removed as a pollutant of Long Branch Reservoir on 2002 303(d) List. The graph shows the levels of Cyanazine and Atrazine in Long Branch Reservoir between 1988 and 2003. Long term average Atrazine level in the reservoir is 1.42 µg/L. The state water quality standard for Atrazine is three µg/L, expressed as a long-term average.

Map of Impaired Portion of Long Branch Lake Showing Sampling Site Location





Source: US Army Corps of Engineers, Mo. Dept. of Natural Resources

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